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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,010	03/28/2002	Per Eld Ibsen	980.1094USWO	4646
7590 10/01/2003			EXAMINER	
Stroock & Stroock & Lavan 180 Maiden Lane New York, NY 10038			STOCK JR, GORDON J	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/889,010

Applicant(s)

IBSEN ET AL.

Examiner

Gordon J Stock

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 51-94 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 51-53, 55-57, 61-72, 77-79, 81, 83, 85, 87 is/are allowed.
- 6) ☒ Claim(s) 89 is/are rejected.
- 7) ☒ Claim(s) 54, 58-60, 73-76, 80, 82, 84, 86, 88, 90-94 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 28 August 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☒ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

1. As discussed with Mr. Iain McIntyre on September 12, 2003, on page 4 of the amendment filed on August 28, 2003, on the line following "Kindly change the claims as shown above" and before Claim 51 should read --Claims 1-50 (previously cancelled)--.

#### *Drawings*

2. The drawings were received on August 28, 2003. These replacement drawings are acceptable.

#### *Priority*

3. A copy of the certified copy of the priority document has not been received from the International Bureau in this National Stage application.

#### **Claim Objections**

4. **Claims 73-76, 80, 82, 84, 86, and 88** (see line 6 of claim 88) are objected to for the following: the phrase, "the object," lacks antecedent basis. Examiner suggests that the phrase read --the at least one object--.

5. The following claim objections were discussed with Mr. Iain McIntyre on September 17, 2003.

6. **Claim 54** is objected to for the following: the phrase, "the aspheric correcting element," lacks antecedent basis and should read --the aberration correcting element--. Correction is required.

7. **Claims 58-59** are objected to for the following: the phrase, "the entrance aperture," should read --the at least one entrance aperture--. Corrections required.

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8. **Claim 60** is objected to for the following: the phrase, "diffractive optical element" should read --the first diffractive optical element--. Correction is required.
9. **Claim 76** is objected to for the following: the phrase, "the body," should read --the transparent body--. Correction is required.
10. **Claim 88** is objected to for the following: the phrase, "the at least one entrance aperture," lacks antecedent basis (line 18 of the claim) and should read --the at least one input means--. Correction is required.
11. **Claim 89** is objected to for the following: the phrase, "the body," on lines 4, 6, and 10 should read --the transparent body--. Correction is required.
12. **Claim 91** is objected to for the following: the phrase, "the signal light," of line 3 should read --reference signal light--. Correction is required.

***Claim Rejections - 35 USC § 103***

13. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
14. **Claim 89** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bittner (5,159,404)** in evidence of **Mächler et al. (4,838,645)**.

As for **claim 89**, Bittner in a diode array spectrometer discloses: inputting signal light to a transparent body through an entrance aperture, an entrance slit, on a first side of the transparent body; propagating divergent signal light from the entrance slit to a diffractive element on a second side of the transparent body, a concave grating, diffracting the divergent signal light with the diffractive element into separated wavelength components; reflecting the divergent separated wavelength components to an exit face using a reflector, the concave grating; and detecting the

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separated wavelength components using a detector unit, a diode array (sole Figure; col. 2, lines 15-60). Bittner does not mention an object; however, there is light to be analyzed (col. 2, lines 35-40) which must originate from an object such as a light source. Therefore, it would be obvious to one skilled in the art that the light analyzed is from an object, for the light must originate from some object such as a light source. As for focusing onto the detector unit, Bittner states that imaging errors are minimized and the spectrum is optically linearized (col. 2, lines 50-55). In addition, the convex shape of the transparent body with the concave shape of the grating suggests focusing (see sole Figure). Also Mächler in a reflection grating that is concave demonstrates the focusing of the reflection grating onto a detector (Figs. 3c and 4a).

*Allowable Subject Matter*

15. **Claims 51-53, 55-57, 61-72, 77-79, 81, 83, 85, and 87** are allowed. **Claims 54, 58-60, 73-76, 80, 82, 84, 86, and 88** would be allowable if rewritten to overcome the objections as stated above. **Claims 90-94** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claim 51**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an apparatus for measuring spectral information of light from at least one object "at least a first back reflecting surface for reflecting light received from the at least one entrance aperture to the at least one front reflecting surface" and "the first diffractive element being arranged to disperse diverging light received from the at least one entrance aperture," in combination with the rest of the limitations of **claims 51-87**.

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As to **claim 88**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an apparatus for measuring spectral information of light from at least one object "at least a first back reflecting surface for reflecting light received from the at least one input means to the at least one front reflecting surface" and "the first diffractive means being arranged to disperse diverging light received from the at least one input means," in combination with the rest of the limitations of **claim 88**.

As to **claim 90**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of measuring spectral information of light from an object reflecting the divergent signal light from the second side to the first side and back to the second side before the divergent signal light is incident on the diffractive element, in combination with the rest of the limitations of **claim 90**.

As to **claim 91**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of measuring spectral information of light from an object illuminating the object with reference light, reference light propagating from the object to the entrance aperture entering the aperture as the signal light, and reducing spectral influence of the reference light on a spectrum signal generated by the detector unit in combination with the rest of the limitations of **claim 91**.

As to **claim 92**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method of measuring spectral information of light from an object illuminating the object with distance light and determining a distance between the object and a distance detector using distance light reflected by the object, in combination with the rest of the limitations of **claims 92-94**.

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***Response to Arguments***

16. Applicant's arguments, see page 13, filed August 28, 2003, with respect to Figure 11 have been fully considered and are persuasive. The objection of Figure 11 has been withdrawn.

17. Applicant's arguments, see page 14, filed August 28, 2003, with respect to Claim 79 have been fully considered and are persuasive. The rejection of claim 79 under 35 U.S.C. 112 2<sup>nd</sup> paragraph has been withdrawn.

18. Applicant's arguments, see pages 15-17, filed August 28, 2003, with respect to claims 51-72 and 88 have been fully considered and are persuasive. Therefore, the rejections of these claims under 35 U.S.C. 103(a) has been withdrawn.

19. Applicant's arguments, see pages 18-19, filed August 28, 2003, with respect to the rejection(s) of claim 89 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made. See above.

20. In regards to the Double Patenting rejection remarks on page 14 filed August 28, 2003, Examiner has withdrawn the rejection of claims 51-72, 88 under the provisional double patenting rejection due to amendment of claims 51 and 88. This is specifically due to the limitation "to disperse diverging light" introduced into the claims. However, "to disperse diverging light" does read on "to receive diverging light," for the diverging light to be dispersed it must be received by the diffractive element.

***Conclusion***

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

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U.S. Patent 4,784,935 to Ehrfeld et al.

U.S. Patent 5,581,639 to Davies et al.

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

#### **Fax/Telephone Numbers**

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

*Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The*



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*form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (703) 305-4787.

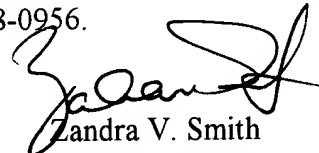
The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gs

September 17, 2003

  
Zandra V. Smith  
Primary Examiner  
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